

# Huawei AR2500 Series IoT Gateway Datasheet



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# AR2500 Series IoT Gateway

## Product Overview

The AR2500 series IoT gateway is designed to work in challenging environments such as extreme temperatures, high humidity, and electromagnetic interference. The AR2500 uses the modular design and supports various types of communication interfaces such as Ethernet and serial interfaces to provide flexible networking modes.

The AR2500 provides the following functions:

- Line-rate switching at Layer 2 and Layer 3.
- Layer 2 functions such as VLAN, STP/MSTP, and SEP, and Layer 3 functions such as static and dynamic unicast routing, and multicast routing.
- Integration of firewall, NAT, and IPSec VPN to meet increasingly complex service requirements of industrial networks.

The AR2500 can be used in a wide range of industries, such as smart grid and intelligent transportation.

The AR2500 is available in three models: AR2504-H and AR2504-D-H.

Model	Specification
 AR2504-H	<ul style="list-style-type: none"> <li>• Fixed interfaces: 4*GE combo, 4*GE RJ45, 1*USB2.0, and 1*DO</li> <li>• Slots: 2*WSIC</li> <li>• Operating temperatures: -40°C to +65°C</li> <li>• Dimensions (W x D x H): 442 mm x 420 mm x 44 mm</li> <li>• Redundant power module: 100V AC ~ 240V AC or 110V DC ~ 250V DC</li> </ul>
 AR2504-D-H	<ul style="list-style-type: none"> <li>• Fixed interfaces: 4*GE combo, 4*GE RJ45, 1*USB2.0, and 1*DO</li> <li>• Slots: 2*WSIC</li> <li>• Operating temperatures: -40°C to +60°C</li> <li>• Dimensions (W x D x H): 442 mm x 420 mm x 44 mm</li> <li>• Redundant power module: 24V DC ~ 48V DC</li> </ul>

## Product Highlights

### Industry-Level Design with Excellent Quality

- Fan-free design which allows the AR2500 to work at temperatures in the range of -40°C to +65°C
- Compliance with transformer substation standards of IEC61850-3 and IEEE1613
- Power modules in backup mode

### High-Density Convergence and Flexible Networking

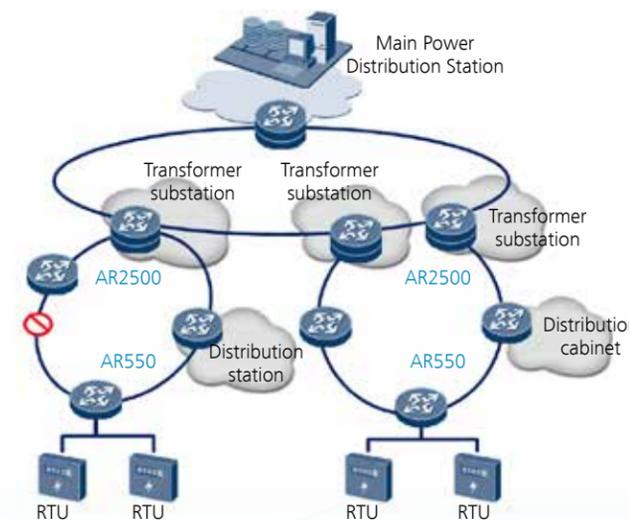
- A maximum of 24\*GE and 2\*10GE interfaces, meeting the demands of industrial devices for expanding network bandwidth
- Flexible ring network topologies: single-ring, open-ring, and multi-ring
- ms switching on a ring network

### Simplified Deployment and Easy O&M

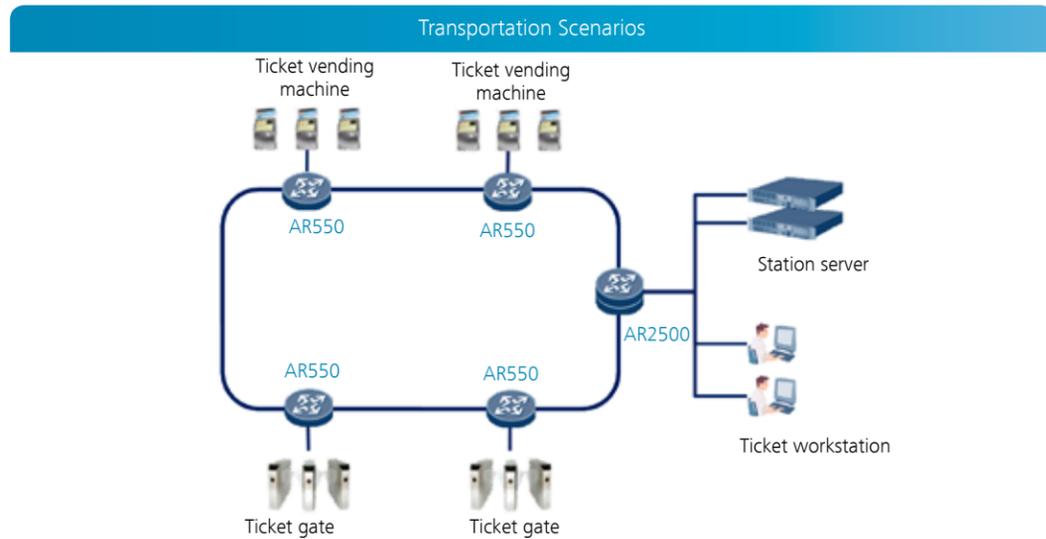
- Service lines leading out from the front panel and indicators on the rear panel, facilitating easy maintenance
- Visualized web configuration
- Plug-and-play, remote topology management, and batch configuring and upgrade

## Typical Application

### Electric Power Scenarios



The AR2500 uses the Smart Ethernet Protection (SEP) protocol that supports 50-ms switching. It also offers a highly reliable communication network with redundancy, and conforms to transformer substation standards of IEC61850-3 and IEEE1613. The AR2500 can automate power distribution and transformer substations, and can provide support for digital and intelligent development of electricity.



The AR2500 uses industrial design, supports dual power modules, and provides SEP, meeting requirements for highly reliable communication in railway transportation scenarios. The AR2500 is applicable to railway transportation scenarios, such as Automatic Fare Collection (AFC), Passenger Information System (PIS), and Integrated Supervisory Control System (ISCS).

### Product Specifications

Specification	AR2504-H	AR2504-D-H
Hardware Specifications		
Fixed interfaces	4*GE combo and 4*GE RJ45	4*GE combo and 4*GE RJ45
Slots	2*WSIC	
Alarm interface	1*DO (3-pin industrial terminal)	
USB2.0	1	
Auxiliary or console interface	1	
Management interface	1*FE RJ45	
DRAM	2 GB	
Flash memory	512 MB	
Forwarding performance	36Mpps	36Mpps
Switching capacity	144Gbps	
Power	Redundant power modules AC: 100V AC ~ 240V AC, 50 Hz/60 Hz (90 V AC to 264 V AC, 47 Hz to 63 Hz) DC: 110V DC ~ 250V DC (88 V DC to 300 V DC) Input undervoltage and overvoltage protection Output short-circuit protection Overheating protection Reverse connection protection	Redundant power modules DC: 24V DC ~ 48V DC (18V DC ~ 60V DC) Input undervoltage and overvoltage protection Output short-circuit protection Overheating protection Reverse connection protection
Maximum output power	One power module configured: 60 W Two power modules configured: 120 W	

Specifications	AR2504-H	AR2504-D-H
Typical power consumption	20W	
Maximum power consumption	25W	
Weight	< 7 kg (interface module excluded)	
Dimensions (W x D x H)	442 mm x 420 mm x 44 mm (mounting ears excluded)	
Storage temperatures	-40°C to +85°C	
Operating temperatures	-40°C to +65°C In compliance with IEC60068-2-1-2007 and ETSI EN 300 019-2-3 V2.2.2:2003, the router can operate reliably for 24 hours in a temperature range of -40°C to +70°C	-40°C to +60°C
Operating humidity	5% to 95% (non-condensing)	
Operating altitude	< 5000 m	
Installation mode	19-inch rack	
IP protection level	IP30	
Certification	North America: UL Germany: GS Global: CB European Union: CE (2004/108/EC, EN 55022, EN 55024, and EN 300386) United States: FCC (47CFR Part 15) Canada: IC (ICES-003) Australia: RCM (original C-Tick: AS/NZS CIPSR22) Electric Power: IEC61850-3/IEEE1613 (for transformer substations) State Grid: Class A	
Vibration and environment test	IEC61850-3 CLASS Cm	
Electromagnetic Compatibility (EMC) standards	IEC 61850-3:2013 IEEE 1613:2009 IEC/TS 61000-6-5:2001 EN 55022:2010 CISPR 22:2008 EN 55024:2010 CISPR 24:2010 ETSI EN 300 386 V1.6.1.2012 ETSI EN 201 468 V1.4.1.2014 VCCI V-3:2015 CAN/CSA-CISPR 22-10 AS/NZS CISPR 22:2009+A1:2010 IEC 61000-3-2:2014/EN 61000-3-2:2014 IEC 61000-3-3:2014/EN 61000-3-3:2013 IEC 61000-6-2:2014/EN 61000-6-2:2005 IEC 61000-6-4:2014+A1:2100/EN 61000-6-4:2007+A1:2011	

Specifications	AR2504-H	AR2504-D-H
Safety standards	UL 60950-1 EN 60950-1 IEC 60950-1 BS EN 60950-1 CSA C22.2 No 60950-1 AS/NZS 60950.1 IS 13252 IEEE1613 IEC61850-3	
Software specifications		
Basic functions	ARP, DHCP, DNS, and DDNS IPv6 ND, DHCPv6, and DNS6 UDP Helper and IP Accounting NAT, NAT, NAT ALG, NetStream, and NQA Policy Based Routing (PBR) and IP FRR	
LAN functions	IEEE 802.1P, IEEE 802.1Q, and IEEE 802.3 VLAN management, Guest VLAN, GVRP Static MAC address, dynamic MAC address, MAC address learning restriction, Sticky MAC, MAC address flapping prevention, and alarm for invalid MAC addresses Port aggregation and LACP	
Ring network protocol	SEP STP, RSTP, and MSTP	
IPv4 unicast routing	Static routing RIP, OSPF, ISIS, and BGP RIPng, OSPFv3, ISISv6, and BGP4+	
Multicast routing	IGMP v1/2/3 and IGMP snooping MLD and MLD snooping PIM DM, PIM SM, and PIM SSM IPv6 PIM	
VPN	IPSec VPN, IKEv1, and IKEv2 GRE VPN	
Quality of Service (QoS)	DiffServ mode, priority mapping, CAR, traffic shaping, congestion avoidance and congestion management, and HQoS Modular QoS (traffic class, traffic behavior, and traffic policy)	
Security	Zone-based stateful firewall Access Control List (ACL) 802.1X authentication, MAC address authentication, and web authentication AAA and RADIUS authentication and HWTACACS authentication Broadcast storm suppression ARP security and ICMP attack defense URPF, DHCP snooping, and DHCPv6 snooping CPCAR, blacklist, and attack source tracing PKI	
Reliability	GR, VRRP, BFD, interface backup, and Ethernet OAM	
Management and maintenance	CLI, web NMS, SNMP (v1/v2c/v3), RMON, NTP, and USB-based deployment	

## AR2500 Configuration

Before choosing an AR2500, determine the device model, cards, and auxiliary materials.

### Device

Select the device model according to the port type and service requirements.

### Cards

Select the service cards and determine the quantity based on the access link type and interface density requirements.

### Auxiliary materials

Determine the types and quantities of dual power modules, optical modules, and cables based on the actual access environment.

## Ordering Information

Model	Ordering Information
Device	
AR2504-H	AR2504-H, 8*GE LAN (4*GE Combo), 1*USB, 1*DO, 2*WSIC, 60 W, AC/DC
AR2504 D-H	AR2504-D-H, 8*GE LAN(4*GE Combo),1*USB, 1*DO, 2*WSIC, 60W DC POWER
WSIC interface module	
AR-8ES2G-HW	8-Port 1000BASE-RJ45 L2 Ethernet interface card
AR-8ES2GS-HW	8-Port 1000BASE-SFP L2 Ethernet interface card
AR-8AS-W	8-Port asynchronous serial interface card
AR-1LTE-L-HW	FDD/HSPA+ Industry Data Card
Power module	
PAC60S12-ON	60 W AC & 110/220 V DC power module
PLD60S12-C1	60W DC 24/48V Power Module

For more information, visit <http://enterprise.huawei.com/en/> or contact a Huawei local sales office.